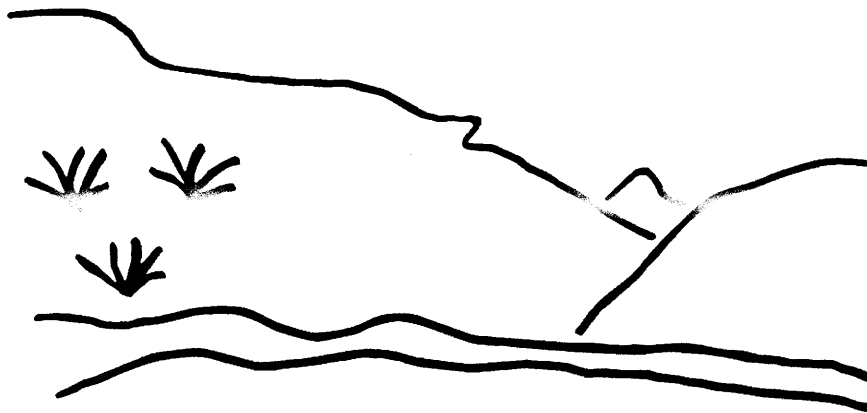


State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Cottonwood/Wilberg
Midterm Permit Review
C/015/019-MT02
Technical Analysis
July 1, 2002

TABLE OF CONTENTS

INTRODUCTION.....	1
SUMMARY OF DEFICIENCIES.....	3
SUMMARY OF PERMIT CONDITIONS.....	5
GENERAL CONTENTS.....	7
IDENTIFICATION OF INTERESTS	7
VIOLATION INFORMATION.....	7
OPERATION PLAN	9
HYDROLOGIC INFORMATION	9
MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS.....	17
Mining Facilities Maps	18
RECLAMATION PLAN.....	21
BONDING AND INSURANCE REQUIREMENTS.....	21
Determination of Bond Amount	22

INTRODUCTION

TECHNICAL ANALYSIS

INTRODUCTION

The midterm review for the Cottonwood/Wilberg Mine was initiated by way of Division correspondence to Chuck Semborski, Environmental Supervisor on March 26, 2002. The following items were chosen for review:

1. An AVS check to ensure that Ownership and Control information is current and correct.
2. A review of the plan to ensure that the requirements of all permit conditions, division orders, notice of violation abatement plans, and permittee-initiated plan changes are appropriately incorporated into the plan document.
3. A review of the applicable portions of the permit to ensure that the plan contains commitments for application of the best technology currently available (BTCA) to prevent additional contributions of suspended solids to stream flows outside of the permit area.
4. A review of the bond to ensure that it is in order and that the cost estimate is accurate and is escalated to the appropriate year dollars.
5. The Division will conduct a technical site visit in conjunction with the assigned compliance inspector to document the status and effectiveness of operational, reclamation, and contemporaneous reclamation practices.

Page 2
C/015/019-MT02
July 1, 2002

INTRODUCTION

SUMMARY OF DEFICIENCIES

SUMMARY OF DEFICIENCIES

The Technical Analysis of the proposed permit changes cannot be completed at this time. Additional information is requested of the permittee to address deficiencies in the proposal. A summary of deficiencies is provided below. Additional comments and concerns may also be found within the analysis and findings made in this Draft Technical Analysis. Upon finalization of this review, any deficiencies will be evaluated for compliance with the regulatory requirements. Such deficiencies may be conditioned to the requirements of the permit issued by the Division, result in denial of the proposed permit changes, or may result in other executive or enforcement action as deemed necessary by the Division at that time to achieve compliance with the Utah Coal Regulatory Program.

Accordingly, the permittee must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

Regulations

- R645-301-112**, Volume one of the MRP needs to include the current ownership and control information.....7
- R645-301-121.200, -512.100, -512.200**, Location and use of silt fence at the Guard Station needs to be clarified on maps or plans. 19
- R645-301-121.200, -512.100, -512.200**, Map 3-16 needs to be checked against what is on the ground to confirm whether or not the Conveyor Bent Pad ASCA it is where indicated on the map..... 19
- R645-301-121.200, -512.100, -512.200**, Maps in Volume 10, such as 4-1, 4-2, or 4-5, need to show the ASCA and the location of silt fence at Waste Rock Site – 65027 accurately enough to allow comparison of design to actual construction or installation, and inspection. 19
- R645-301-121.200, -512.100, -512.200**, The ASCA and associated BTCA at the Sewer Absorption Field need to be shown on a map or plan at a scale large enough to allow comparison of design to actual construction or installation, and inspection. 19

Page 4
C/O/015/019-MT02
July 1, 2002

SUMMARY OF DEFICIENCIES

SUMMARY OF PERMIT CONDITIONS

SUMMARY OF PERMIT CONDITIONS

SPECIAL CONDITIONS OR STIPULATIONS TO THE PERMIT APPROVAL

Regulatory References: 30 CFR773.17; R645-300-140; R645-300-145.

Analysis:

The permit was renewed on August 10, 1999 and expires July 6, 2004. One stipulation is attached to the permit. The stipulation requires water-monitoring data to be submitted into the Division's Water Quality Database. Alyson Boye has nearly completed the backlog of data entry.

Findings:

There are no special conditions or stipulations attached to the current permit. The permittee-initiated plan changes have been incorporated into the plan document. The Cottonwood/Wilberg facility has met the regulatory requirements for this portion (item#2) of the midterm review.

Page 6
C/0/015/019-MT02
July 1, 2002

SUMMARY OF PERMIT CONDITIONS

GENERAL CONTENTS

GENERAL CONTENTS

IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

Minimum Regulatory Reference:

The operator of the coal mine and all owners and controllers of the operation must be identified by name and address. The Division with the Applicant/Violator System must crosscheck the information provided and other sources such as DOGM inspection and enforcement records, State corporation commission or tax records. If the Division identifies any errors in the ownership or control information, the applicant must be contacted to resolve the matter immediately. If the Division discovers that none of the persons identified in the application has had any previous mining experience, the applicant will be contacted to verify this fact.

The Applicant/Violator System will be updated with new information received by the Division.

Analysis:

Volume one of the MRP contains ownership and control information dated 1996. The 2000 annual report is somewhat more current with ownership and control information from 1999-2000.

Findings:

R645-301-112, Volume one of the MRP needs to include the current ownership and control information

VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

Minimum Regulatory Reference:

The application must inform the Division of any of the following:

- (1) State or Federal permits suspension or revocation;
- (2) Bond or other security forfeiture in the last five years;
- (3) Any State or Federal violations received in the last three years by the applicant or any subsidiary, affiliate, or persons controlled by or under common control with the applicant. All outstanding violations (regardless of date) must also be disclosed.

The Division will review all available information and will not issue a permit if any operation owned or controlled by the applicant or linked to the applicant is in violation of SMCRA or the State Program or any State or Federal environmental law.

The Division will notify the applicant of the violation, suspension or forfeiture hindering their current application for permit and give the applicant an opportunity to rebut the findings. The Division will keep the Applicant Violator System updated.

Analysis:

GENERAL CONTENTS

There are no outstanding notice of violation abatement plans for the Cottonwood/Wilberg facility. There have been no coal mining and reclamation operations in the name of Pacificorp revoked or suspended nor has there been a performance bond forfeited in the five years proceeding this review.

Findings:

The Cottonwood/Wilberg facility has met the regulatory requirements for this portion (item #2) of the midterm review.

OPERATION PLAN

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Minimum Regulatory Requirements:

General

All underground mining and reclamation activities shall be conducted to minimize disturbance of the hydrologic balance within the permit and adjacent areas, to prevent material damage to the hydrologic balance outside the permit area, and to support approved postmining land uses in accordance with the terms and conditions of the approved permit and the performance standards of this part. The Division may require additional preventative, remedial, or monitoring measures to assure that material damage to the hydrologic balance outside the permit area is prevented. Mining and reclamation practices that minimize water pollution and changes in flow shall be used in preference to water treatment.

Groundwater Monitoring

In order to protect the hydrologic balance underground mining activities shall be conducted according to the hydrologic reclamation plan. Ground-water quality shall be protected by handling earth materials and runoff in a manner that minimizes acidic, toxic, or other harmful infiltration to ground-water systems and by managing excavations and other disturbances to prevent or control the discharge of pollutants into the ground water.

Ground-water monitoring shall be conducted according to the ground-water monitoring plan. The Division may require additional monitoring when necessary. Ground-water monitoring data shall be submitted every 3 months to the Division or more frequently as prescribed by the Division. Monitoring reports shall include analytical results from each sample taken during the reporting period. When the analysis of any ground-water sample indicates noncompliance with the permit conditions, the operator shall promptly notify the Division and immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance. Plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC shall be submitted to the Division as required.

Ground-water monitoring shall proceed through mining and continue during reclamation until bond release. The Division may modify the monitoring requirements including the parameters covered and the sampling frequency if the operator demonstrates, using the monitoring data obtained, that: the operation has minimized disturbance to the prevailing hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses; or, monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan.

Equipment, structures, and other devices used in conjunction with monitoring the quality and quantity of ground water onsite and offsite shall be properly installed, maintained, and operated and shall be removed by the operator when no longer needed.

Surface Water Monitoring

In order to protect the hydrologic balance, underground mining activities shall be conducted according to the approved plan, and the following: surface-water quality shall be protected by handling earth materials, ground-water discharges, and runoff in a manner that minimizes the formation of acidic or toxic drainage; prevents, to the extent possible using the best technology currently available, additional contribution of suspended solids to streamflow outside the permit area; and otherwise prevent water pollution. If drainage control, restabilization and revegetation of disturbed areas, diversion of runoff, mulching, or other reclamation and remedial practices are not adequate to meet water-quality standards and effluent limitations, the operator shall use and maintain the necessary water-treatment facilities or water-quality controls. Surface-water quantity and flow rates shall be protected by handling earth materials and runoff in accordance with the steps outlined in the approved plan.

Surface-water monitoring shall be conducted according to the approved surface-water monitoring plan. The Division may require additional monitoring when necessary. Surface-water monitoring data shall be submitted every 3 months to the Division or more frequently as prescribed by the Division. Monitoring reports shall include analytical results from each sample taken during the

OPERATION PLAN

reporting period. When the analysis of any surface-water sample indicates noncompliance with the permit conditions, the operator shall promptly notify the Division and immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance. Plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC shall be submitted to the Division as required. The reporting requirements of the water monitoring plan do not exempt the operator from meeting any National Pollutant Discharge Elimination System (NPDES) reporting requirements.

Surface-water monitoring shall proceed through mining and continue during reclamation until bond release. The Division may modify the monitoring requirements, except those required by the NPDES permitting authority, including the parameters covered and sampling frequency if the operator demonstrates, using the monitoring data obtained, that: the operation has minimized disturbance to the hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses; and, monitoring is no longer necessary to achieve the purposes set forth in the approved monitoring plan.

Equipment, structures, and other devices used in conjunction with monitoring the quality and quantity of surface water onsite and offsite shall be properly installed, maintained, and operated and shall be removed by the operator when no longer needed.

Acid- and toxic-forming materials and underground development waste

Drainage from acid- and toxic-forming materials and underground development waste into surface water and ground water shall be avoided by: identifying and burying and/or treating, when necessary, materials which may adversely affect water quality, or be detrimental to vegetation or to public health and safety if not buried and/or treated; and, storing materials in a manner that will protect surface water and ground water by preventing erosion, the formation of polluted runoff, and the infiltration of polluted water.

Discharges into an underground mine

Discharges into an underground mine are prohibited, unless specifically approved by the Division after a demonstration that the discharge will: minimize disturbance to the hydrologic balance on the permit area, prevent material damage outside the permit area and otherwise eliminate public hazards resulting from underground mining activities; not result in a violation of applicable water quality standards or effluent limitations; be at a known rate and quality which shall meet the effluent limitations for pH and total suspended solids, except that the pH and total suspended solids limitations may be exceeded, if approved by the Division; and, meet with the approval of the Mine Safety and Health Administration.

Discharges shall be limited to the following: water; coal-processing waste; fly ash from a coal-fired facility; sludge from an acid-mine-drainage treatment facility; flue-gas desulfurization sludge; inert materials used for stabilizing underground mines; and, underground mine development wastes.

Water from one underground mine may be diverted into other underground workings according to the requirements of this section.

Gravity discharges from underground mines

Surface entries and accesses to underground workings shall be located and managed to prevent or control gravity discharge of water from the mine. The surface entries and accesses of drift mines first used after the implementation of a State, Federal, or Federal Lands Program and located in acid-producing or iron-producing coal seams shall be located in such a manner as to prevent any gravity discharge from the mine. Gravity discharges of water from an underground mine first used before the implementation of a State, Federal, or Federal Lands Program, may be allowed by the Division if it is demonstrated that the untreated or treated discharge complies with the performance standards and any additional NPDES permit requirements.

Water-quality standards and effluent limitations

Compliance with all applicable State and Federal water quality laws and regulations and with the effluent limitations for coal mining promulgated by the U.S. Environmental Protection Agency set forth in 40 CFR Part 434.

Diversions: General

With the approval of the Division, any flow from mined areas abandoned before May 3, 1978, and any flow from undisturbed areas or reclaimed areas, after meeting the criteria for siltation structure removal, may be diverted from disturbed areas by means of temporary or permanent diversions. All diversions shall be designed to minimize adverse impacts to the hydrologic balance within the permit and adjacent areas, to prevent material damage outside the permit area and to assure the safety of the public. Diversions shall not be used to divert water into underground mines without approval of the Division.

The diversion and its appurtenant structures shall be designed, located, constructed, and maintained to: be stable;

OPERATION PLAN

provide protection against flooding and resultant damage to life and property; prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow outside the permit area; and, comply with all applicable local, State, and Federal laws and regulations.

Temporary diversions shall be removed when no longer needed to achieve the purpose for which they were authorized. The land disturbed by the removal process shall be restored. Before diversions are removed, downstream water-treatment facilities previously protected by the diversion shall be modified or removed, as necessary, to prevent overtopping or failure of the facilities. This requirement shall not relieve the operator from maintaining water-treatment facilities as otherwise required.

A permanent diversion or a stream channel reclaimed after the removal of a temporary diversion shall be designed and constructed so as to restore or approximate the premining characteristics of the original stream channel including the natural riparian vegetation to promote the recovery and the enhancement of the aquatic habitat. The Division may specify additional design criteria for diversions.

Diversions: Perennial and intermittent streams

Diversion of perennial and intermittent streams within the permit area may be approved by the Division after making the finding relating to stream buffer zones that the diversions will not adversely affect the water quantity and quality and related environmental resources of the stream. The design capacity of channels for temporary and permanent stream channel diversions shall be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream from the diversion. Protection against flooding and resultant damage to life and property shall be met when the temporary and permanent diversions for perennial and intermittent streams are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a 10-year, 6-hour precipitation event for a temporary diversion and a 100-year, 6-hour precipitation event for a permanent diversion. The design and construction of all stream channel diversions of perennial and intermittent streams shall be certified by a qualified registered professional engineer as meeting the performance standards and any design criteria set by the Division.

Diversions: Miscellaneous flows

Diversion of miscellaneous flows, which consist of all flows except for perennial and intermittent streams, may be diverted away from disturbed areas if required or approved by the Division. Miscellaneous flows shall include ground-water discharges and ephemeral streams. The design, location, construction, maintenance, and removal of diversions of miscellaneous flows shall meet all of the general performance standards of this section. Protection against flooding and resultant damage to life and property shall be met when the temporary and permanent diversions for miscellaneous flows are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a 2-year, 6-hour precipitation event for a temporary diversion and a 10-year, 6-hour precipitation event for a permanent diversion.

Stream buffer zones

No land within 100 feet of a perennial stream or an intermittent stream shall be disturbed by underground mining activities, unless the Division specifically authorizes underground mining activities closer to, or through, such a stream. The Division may authorize such activities only upon finding that: underground mining activities will not cause or contribute to the violation of applicable State or Federal water quality standards and will not adversely affect the water quantity and quality or other environmental resources of the stream; and, if there will be a temporary or permanent stream-channel diversion, it will comply with the regulatory requirements for diversions.

The area not to be disturbed shall be designated as a buffer zone, and the operator shall mark it accordingly with buffer zone markers.

Sediment control measures

Appropriate sediment control measures shall be designed, constructed, and maintained using the best technology currently available to: prevent, to the extent possible, additional contributions of sediment to stream flow or to runoff outside the permit area; meet the more stringent of applicable State or Federal effluent limitations; and, minimize erosion to the extent possible.

Sediment control measures include practices carried out within and adjacent to the disturbed area. The sedimentation storage capacity of practices in and downstream from the disturbed areas shall reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment. Sediment control measures consist of the utilization of proper mining and reclamation methods and sediment control practices, singly or in combination. Sediment control methods include but are not limited to: disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling, grading, and prompt revegetation; stabilizing the backfilled material to promote a reduction of the rate and volume of runoff; retaining sediment within disturbed areas; diverting runoff away from disturbed areas; diverting runoff using protected channels or pipes through disturbed areas so as not to cause additional erosion; using straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds, and other measures that reduce overland flow velocity, reduce runoff volume, or trap sediment; treating with chemicals; and, treating mine drainage in underground sumps.

OPERATION PLAN

Siltation Structures: General

All surface drainage from disturbed areas shall be passed through a siltation structure before leaving the permit area. Siltation structures shall mean a sedimentation pond, a series of sedimentation ponds, or other treatment facility. Other treatment facilities means any chemical treatments, such as flocculation, or mechanical structures, such as clarifiers, that have a point-source discharge and that are utilized to prevent additional contribution of suspended solids to streamflow or runoff outside the permit area.

Disturbed area requiring treatment through a siltation structure shall not include those areas in which the only underground mining activities include: diversion ditches, siltation structures, or roads that are designed, constructed and maintained in accordance with the regulatory requirements; and, for which the upstream area is not otherwise disturbed by the operator.

Additional contributions of suspended solids and sediment to streamflow or runoff outside the permit area shall be prevented to the extent possible using the best technology currently available. Siltation structures for an area shall be constructed before beginning any underground mining activities in that area, and upon construction shall be certified by a qualified registered professional engineer, or when authorized under the regulations, by a qualified registered professional land surveyor, to be constructed as designed and as approved in the reclamation plan.

Any siltation structure which impounds water shall be designed, constructed and maintained in accordance with the requirements for impoundments.

Siltation structures shall be maintained until removal is authorized by the Division and the disturbed area has been stabilized and revegetated. In no case shall the structure be removed sooner than 2 years after the last augmented seeding. When the siltation structure is removed, the land on which the siltation structure was located shall be regraded and revegetated in accordance with the reclamation plan. Sedimentation ponds approved by the Division for retention as permanent impoundments may be exempted from this requirement.

Any point-source discharge of water from underground workings to surface waters which does not meet effluent limitations shall be passed through a siltation structure before leaving the permit area.

Siltation Structures: Sedimentation ponds

Sedimentation ponds, when used, shall: be used individually or in series; be located as near as possible to the disturbed area and out of perennial streams unless approved by the Division; and, be designed, constructed, and maintained to:

- 1.) Provide adequate sediment storage volume;
- 2.) Provide adequate detention time to allow the effluent from the ponds to meet State and Federal effluent limitations;
- 3.) Contain or treat the 10-year, 24-hour precipitation event ("design event") unless a lesser design event is approved by the Division based on terrain, climate, other site-specific conditions and on a demonstration by the operator that the effluent limitations will be met;
- 4.) Provide a nonclogging dewatering device adequate to maintain the required time;
- 5.) Minimize, to the extent possible, short circuiting;
- 6.) Provide periodic sediment removal sufficient to maintain adequate volume for the design event;
- 7.) Ensure against excessive settlement;
- 8.) Be free of sod, large roots, frozen soil, and acid- or toxic-forming coal-processing waste; and
- 1.) Be compacted properly.

A sedimentation pond shall include either a combination of principal and emergency spillways or a single open-channel spillway configured as specified in this section, designed and constructed to safely pass the applicable design precipitation event. The Division may approve a single open-channel spillway that is: of nonerodible construction and designed to carry sustained flows; or earth- or grass-lined and designed to carry short-term infrequent flows at non-erosive velocities where sustained flows are not expected.

The required design precipitation event for a sedimentation pond meeting the spillway requirements of this section is: for a sedimentation pond meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 100-year 6-hour event, or greater event as specified by the Division; or, for a sedimentation pond not meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 25-year 6-hour event, or greater event as specified by the Division.

In lieu of meeting the above spillway requirements, the Division may approve a sedimentation pond that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified registered professional engineer or, as applicable, a qualified registered professional land surveyor that: the sedimentation pond will safely control the design precipitation event; the water from which shall be safely removed in accordance with current, prudent, engineering practices; and, such a sedimentation pond shall be located where failure would not be expected to cause loss of life or serious property damage. If the sediment pond is located where failure would be expected to cause loss of life or serious property

OPERATION PLAN

damage, a sedimentation pond that relies primarily on storage to control the runoff from the design precipitation event may be allowed if, in addition to the design event, is: in the case of a sedimentation pond meeting the size or other criteria of 30 CFR Sec. 77.216(a), designed to control the precipitation of the probable maximum precipitation of a 6-hour event, or greater event as specified by the Division; or, in the case of a sedimentation pond not meeting the size or other criteria of 30 CFR Sec. 77.216(a), designed to control the precipitation of a 100-year 6-hour event, or greater event as specified by the Division.

Siltation Structures: Other treatment facilities

Other treatment facilities shall be designed to treat the 10-year, 24-hour precipitation even unless a lesser design event is approved by the Division based on terrain, climate, other site-specific conditions and a demonstration by the operator that the effluent limitations will be met. Other treatment facilities shall be designed, constructed and maintained accordance with the applicable requirements as described under sediment ponds.

Siltation Structures: Exemptions

Exemptions to the requirements of this section may be granted if: the disturbed drainage area within the total disturbed area is small; and, the operator demonstrates that siltation structures and alternate sediment control measures are not necessary for drainage from the disturbed drainage areas to meet effluent limitations and applicable State and Federal water-quality standards for the receiving waters.

Discharge structures

Discharge from sedimentation ponds, permanent and temporary impoundments, coal processing waste dams and embankments, and diversions shall be controlled, by energy dissipators, riprap channels, and other devices, where necessary, to reduce erosion, to prevent deepening or enlargement of stream channels, and to minimize disturbance of the hydrologic balance. Discharge structures shall be designed according to standard engineering design procedures.

Impoundments

The following requirements apply to both temporary and permanent impoundments:

- 1.) An impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) shall comply with the requirements of 30 CFR Sec. 77.216 and this section.
- 2.) The design of impoundments shall be certified as designed to meet the requirements of the regulations using current, prudent, engineering practices and any design criteria established by the Division. The qualified, registered, professional engineer or qualified, registered, professional, land surveyor shall be experienced in the design and construction or impoundments.
- 3.) An impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) or located where failure would be expected to cause loss of life or serious property damage shall have a minimum static safety factor of 1.5 for a normal pool with steady state seepage saturation conditions, and a seismic safety factor of at least 1.2. Impoundments not meeting the size or other criteria of 30 CFR Sec. 77.216(a), except for a coal mine waste impounding structure, and located where failure would not be expected to cause loss of life or serious property damage shall have a minimum static safety factor of 1.3 for a normal pool with steady state seepage saturation conditions. For an impoundment not meeting the size of other criteria of 30 CFR Sec. 77.216(a), where failure would not be expected to cause loss of life or serious property damage, the Division may establish engineering design standards that ensure stability comparable to a 1.3 minimum static safety factor in lieu of engineering tests to establish compliance with the minimum static safety factor of 1.3.
- 4.) Impoundments shall have adequate freeboard to resist overtopping by waves and by sudden increases in storage volume.
- 5.) Foundations and abutments for an impounding structure shall be stable during all phases of construction and operation and shall be designed based on adequate and accurate information on the foundation conditions. For an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a), foundation investigation, as well as any necessary laboratory testing of foundation material, shall be performed to determine the design requirements for foundation stability. All vegetative and organic materials shall be removed and foundations excavated and prepared to resist failure. Cutoff trenches shall be installed if necessary to ensure stability.
- 6.) Slope protection shall be provided to protect against surface erosion at the site and protect against sudden drawdown.
- 7.) Faces of embankments and surrounding areas shall be vegetated, except that faces where water is impounded may be riprapped or otherwise stabilized in accordance with accepted design practices.
- 8.) Spillways: An impoundment shall include either a combination of principal and emergency spillways, a single open-channel spillway, or, be configured as an impoundment that relies primarily on storage to control the runoff from the applicable design precipitation event. The Division may approve a single open-channel spillway that is of nonerodible construction and designed to carry sustained flows; or, earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected. Except

OPERATION PLAN

impoundments that rely primarily on storage to control the runoff, the required design precipitation events for an impoundment having spillways are: for an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) a 100-year 6-hour event, or greater event as specified by the Division; and, for an impoundment not meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 25-year 6-hour event, or greater event as specified by the Division. In lieu of meeting the single open-channel spillway requirements, the Division may approve an impoundment that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified registered professional engineer or qualified registered professional land surveyor that the impoundment will safely control the design precipitation event, the water from which shall be safely removed in accordance with current, prudent, engineering practices. Such an impoundment shall be located where failure would not be expected to cause loss of life or serious property damage, except where: in the case of an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a), it is designed to control the precipitation of the probable maximum precipitation of a 6-hour event, or greater event as specified by the Division; or, in the case of an impoundment not meeting the size or other criteria of 30 CFR Sec. 77.216(a), it is designed to control the precipitation of a 100-year 6-hour event, or greater event as specified by the Division.

9.) The vertical portion of any remaining highwall shall be located far enough below the low-water line along the full extent of highwall to provide adequate safety and access for the proposed water users.

10.) Inspections: Except as provided in paragraph (a)(10)(iv) of this section, a qualified registered professional engineer or other qualified professional specialist under the direction of a professional engineer, shall inspect each impoundment as provided in paragraph (a)(10)(i) of this section. The professional engineer or specialist shall be experienced in the construction of impoundments.

Inspections shall be made regularly during construction, upon completion of construction, and at least yearly until removal of the structure or release of the performance bond. The qualified registered professional engineer, or qualified registered professional land surveyor as applicable, shall promptly after each inspection provide to the Division a certified report that the impoundment has been constructed and/or maintained as designed and in accordance with the approved plan and this section. The report shall include discussion of any appearance of instability, structural weakness or other hazardous condition, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedures and instrumentation, and any other aspects of the structure affecting stability. A copy of the report shall be retained at or near the minesite.

A qualified registered professional land surveyor may inspect any temporary or permanent impoundment that does not meet the size or other criteria of 30 CFR Sec. 77.216(a) and certify and submit the report required above, except that all coal mine waste impounding structures shall be certified by a qualified registered professional engineer. The professional land surveyor shall be experienced in the construction of impoundments. Impoundments subject to 30 CFR Sec. 77.216 must be examined in accordance with 30 CFR Sec. 77.216-3. Other impoundments shall be examined at least quarterly by a qualified person designated by the operator for appearance of structural weakness and other hazardous conditions.

If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment shall promptly inform the Division of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the Division shall be notified immediately. The Division shall then notify the appropriate agencies that other emergency procedures are required to protect the public.

A permanent impoundment of water may be created, if authorized by the Division in the approved permit based upon the following demonstration:

- 1.) The size and configuration of such impoundment will be adequate for its intended purposes.
- 2.) The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable State and Federal water quality standards, and discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable State and Federal water quality standards.
- 3.) The water level will be sufficiently stable and be capable of supporting the intended use.
- 4.) Final grading will provide for adequate safety and access for proposed water users.
- 5.) The impoundment will not result in the diminution of the quality and quantity of water utilized by adjacent or surrounding landowners for agricultural, industrial, recreational, or domestic uses.
- 6.) The impoundment will be suitable for the approved postmining land use.

The Division may authorize the construction of temporary impoundments as part of underground mining activities.

Ponds, impoundments, banks, dams, and embankments

Each application shall include a general plan for each proposed sedimentation pond, water impoundment, and coal processing waste bank, dam, or embankment within the proposed permit area. Each general plan shall:

- 1.) Be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such

OPERATION PLAN

plans, a qualified, registered, professional land surveyor with assistance from experts in related fields such as landscape architecture;

- 2.) Contain a description, map, and cross section of the structure and its location;
- 3.) Contain preliminary hydrologic and geologic information required to assess the hydrologic impact of the structure;
- 4.) Contain a survey describing the potential effect on the structure from subsidence of the subsurface strata resulting from past underground mining operations if underground mining has occurred; and
- 5.) Contain a certification statement which includes a schedule setting forth the dates when any detailed design plans for structures that are not submitted with the general plan will be submitted to the Division. The Division shall have approved, in writing, the detailed design plan for a structure before construction of the structure begins.

Each detailed design plan for a structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall:

- 1.) Be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture;
- 2.) Include any geotechnical investigation, design, and construction requirements for the structure;
- 3.) Describe the operation and maintenance requirements for each structure; and
- 4.) Describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for a structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall:

- 1.) Be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments covered by Sections 817.81-817.84 of this Chapter shall be certified by a qualified, registered, professional engineer;
- 2.) Include any design and construction requirements for the structure, including any required geotechnical information;
- 3.) Describe the operation and maintenance requirements for each structure; and
- 4.) Describe the timetable and plans to remove each structure, if appropriate.

Sedimentation ponds, whether temporary or permanent, shall be designed in compliance with the requirements of Siltation Structures. Any sedimentation pond or earthen structure which will remain on the proposed permit area as a permanent water impoundment shall also be designed to comply with the requirements for Impoundments. Each plan shall, at a minimum, comply with the requirements of the Mine Safety and Health Administration, 30 CFR Sections 77.216-1 and 77.216-2.

Permanent and temporary impoundments shall be designed to comply with the requirements for Impoundments. Each plan for an impoundment meeting the size of other criteria of the Mine Safety and Health Administration shall comply with the requirements of 30 CFR Sec. 77.216-1 and 77.216-2. The plan required to be submitted to the District Manager of MSHA under Sec. 77.216 of this title shall be submitted to the Division as part of the permit application. For an impoundment not meeting the size of other criteria of 30 CFR Sec. 77.216(a) and located where failure would not be expected to cause loss of life or serious property damage, the Division may establish through the State program approval process engineering design standards that ensure stability comparable to a 1.3 minimum static safety factor in lieu of engineering tests to establish compliance with the minimum static safety factor of 1.3.

Coal processing waste banks, dams and embankments shall be designed to comply with the requirements for Coal Mine Waste. Each plan shall comply with the requirements of the Mine Safety and Health Administration, 30 CFR Sections 77.216-1 and 77.216-2, and shall contain the results of a geotechnical investigation of the proposed dam or embankment foundation area, to determine the structural competence of the foundation which will support the proposed dam or embankment structure and the impounded material. The geotechnical investigation shall be planned and supervised by an engineer or engineering geologist, according to the following:

- 1.) The number, location, and depth of the borings and test pits shall be determined using current prudent engineering practice for the size of the dam or embankment, quantity of material to be impounded, and subsurface conditions.
- 2.) The character of the overburden and bedrock, the proposed abutment sites, and any adverse geotechnical conditions which may affect the particular dam, embankment, or reservoir site shall be considered.
- 3.) All springs, seepage, and ground-water flow observed or anticipated during wet periods in the area of the proposed dam or embankment shall be identified on each plan.
- 4.) Consideration shall be given to the possibility of mudflows, rock-debris falls, or other landslides into the dam, embankment, or impounded material.

If the structure is 20 feet or higher or impounds more than 20 acre-feet, each plan of this section shall include a stability analysis of each structure. The stability analysis shall include, but not be limited to, strength parameters, pore pressures, and

long-term seepage conditions. The plan shall also contain a description of each engineering design assumption and calculation with a discussion of each alternative considered in selecting the specific design parameters and construction methods.

Analysis:

Alternate Sediment Control Areas (ASCA)

There are ten ASCAs in the permit area. A total of 15.61 acres is disturbed by these ASCAs according to Table 5 in Part 3 of the MRP.

1 - Miller Canyon – 0.02 acre. Sediment control at this reclaimed area is by surface roughening and deep pocking. This is discussed in Appendix XXII. Locations of the three small disturbed areas are shown on a map in Attachment # 4, but there are no detailed maps or plans. A photo essay in Attachment #5 and other photos in Appendix XXII document the nature of the ASCAs and BTCA used for sediment control. Detailed maps or drawings would provide no additional useful information.

2 – Sewer Absorption Field – 1.25 acres. Silt fence provides sediment control. Map 1-3 shows the general location at a small-scale, but there is no detailed map or plan.

3 – Proposed Cottonwood Fan-Portal Reclamation – 8.4 acres. This site is being reclaimed, and surface roughening, deep pocking, strawbales, silt fence, sedimentation basins, berms, and rock gabions provide sediment control. Although not specified in the MRP, vegetation is becoming established and provides substantial sediment control. Plans are to remove silt fence and sedimentation ponds in the near future, perhaps in 2002. Map 3-13 of Volume 11 shows the features of this ASCA.

4 – Waste Rock Site – Outslope – 0.93 acre. Strawbales and silt fence provide sediment control at this ASCA, which is the outslope of a reclaimed waste rock pile. Drawing CM-10361-WB in Appendix VII shows the location of this ASCA.

5 – Guard Station – 0.18 acre. Silt fence provides sediment control. It isn't really clear from the information in the MRP where this silt fence is deployed. A blue line on Map 3-16 indicates silt fence entirely surrounds this guard station.

6 – Conveyor Bent Pad – 0.04 acre. Sediment control is by strawbales. Map 3-16 shows this ASCA around the base of a conveyor bent that is inside the disturbed area (a bent for the conveyor that runs southwest to northeast from a portal to the silo). A small disturbed area at the base of another bent (on the north-south conveyor between the transfer-station and the silo) is separated from the main disturbed area but is not shown as an ASCA. The map should be checked against what is on the ground to confirm whether or not the ASCA is actually where it is indicated on Map 3-16.

7 – Tube Conveyor Access Road - 0.24 acre. Sediment control is by silt fence,

OPERATION PLAN

strawbales, and berms. Map 3-16 shows this ASCA.

8 – Wilberg Fan - 0.67 acre. A sediment trap and berm provide sediment control. Map 3-16 shows this site.

9 – Deer Creek Mine 9th East Breakouts – 0.60 acre. Reclamation of this site was completed in 1999, and surface roughening and deep pocking provide sediment control. The ASCA is shown on Map 3-16.

10 – Waste Rock Site – 65027 – 3.28 acres. Map 4-2 in Volume 10 indicates the general location of this ASCA, but neither Map 4-2 nor any other map in Volume 10 clearly defines the ASCA. Maps 4-1 and 4-5 show the location of a fence, but it is unclear whether this is a security fence or the silt fence of the ASCA.

Findings:

Except for problems discussed under the following section on Maps, Plans, and Cross Sections of Mining, information on the use of BTCA to prevent additional contributions of suspended solids to stream flows outside of the permit area is sufficient to meet the requirements of the Coal Mining Rules.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Minimum Regulatory Requirements:

Each application shall contain maps, plans, and cross sections which show the mining activities to be conducted, the lands to be affected throughout the operation, and any change in a facility or feature to be caused by the proposed operations, if the facility or feature was shown and described as an existing structure.

The following shall be shown for the proposed permit area:

Affected area maps

The boundaries of all areas proposed to be affected over the estimated total life of all mining activities and reclamation activities, with a description of size, sequence, and timing of phased reclamation activities and treatments. All maps and cross sections used for mining design and mining operations shall clearly show the affected and permit area boundaries in reference to the reclamation work being accomplished.

Mining facilities maps

Location of each facility used in conjunction with mining operations. Such structures and facilities shall include, but not be limited to: buildings, utility corridors, roads, and facilities to be used in mining and reclamation operations or by others within the permit area; each coal storage, cleaning, and loading area; each topsoil, spoil, coal preparation waste, underground development waste, and noncoal waste storage area; each water diversion, collection, conveyance, treatment, storage and discharge facility; each source of waste and each waste disposal facility relating to coal processing or pollution control; each facility to be used to protect and enhance fish and wildlife related environmental values; each explosives storage and handling facility; location of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing water dam and embankment, and disposal areas for underground development waste and excess spoil; and, each plan or profile, at cross sections specified by the Division, of the anticipated surface configuration to be achieved for the affected areas during mining operations.

OPERATION PLAN

Mine workings maps

Location and extent of known workings of proposed, active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas. Location and extent of existing or previously surface-mined areas within the proposed permit area.

Monitoring and sampling location maps

Elevations and locations of test borings and core samplings. Elevations and locations of monitoring stations used to gather data on water quality and quantity, subsidence, fish and wildlife, and air quality, as required during mining operations.

Certification Requirements

Cross sections, maps, and plans required to show the design, location, elevation, or horizontal or vertical extent of the land surface or of a structure or facility used to conduct mining and reclamation operations shall be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional land surveyor, with assistance from experts in related fields such as landscape architecture.

Each detailed design plan for an impounding structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture; include any geotechnical investigation, design, and construction requirements for the structure; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for an impounding structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments shall be certified by a qualified, registered, professional engineer; include any design and construction requirements for the structure, including any required geotechnical information; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Analysis:

Mining Facilities Maps

Depictions of ASCAs on some maps were found to be inaccurate or unclear, including, but not limited to:

Sewer Absorption Field Map 1-3 shows the general location of the ASCA at the Sewer Absorption Field, but there is no detailed map or plan of the ASCA.

Guard Station. Silt fence provides sediment control at the Guard Station, but it isn't really clear from the information in the MRP where this silt fence is deployed. A blue line on Map 3-16 indicates silt fence entirely surrounds this guard station.

Conveyor Bent Pad Map 3-16 shows this ASCA around the base of a conveyor bent that is inside the disturbed area (the bent is for the conveyor that runs southwest to northeast from a portal to the silo). A small disturbed area at the base of another bent (on the north-south conveyor between the transfer-station and the silo) is separated from the main disturbed area but is not shown as an ASCA. The map should be checked against what is on the ground to confirm whether or not the ASCA is actually where it is indicated on Map 3-16.

OPERATION PLAN

Waste Rock Site –65027 Map 4-2 in Volume 10 indicates the general location of the ASCA at this Waste Rock Site, but neither Map 4-2 nor any other map in Volume 10 clearly delineates the ASCA. Maps 4-1 and 4-5 show the location of a fence, but it is unclear whether this is a security fence or the silt fence of the ASCA.

Findings:

R645-301-121.200, -512.100, -512.200, The ASCA and associated BTCA at the Sewer Absorption Field need to be shown on a map or plan at a scale large enough to allow comparison of design to actual construction or installation, and inspection.

R645-301-121.200, -512.100, -512.200, Location and use of silt fence at the Guard Station needs to be clarified on maps or plans.

R645-301-121.200, -512.100, -512.200, Map 3-16 needs to be checked against what is on the ground to confirm whether or not the Conveyor Bent Pad ASCA it is where indicated on the map.

R645-301-121.200, -512.100, -512.200, Maps in Volume 10, such as 4-1, 4-2, or 4-5, need to show the ASCA and the location of silt fence at Waste Rock Site – 65027 accurately enough to allow comparison of design to actual construction or installation, and inspection.

Page 20
C/015/019-MT02
July 1, 2002

OPERATION PLAN

RECLAMATION PLAN

RECLAMATION PLAN

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR 800; R645-301-800, et seq.

Minimum Regulatory Requirements:

General

After a permit application has been approved, but before a permit is issued, the applicant shall file with the Division, on a form prescribed and furnished by the Division, a bond or bonds for performance made payable to the Division and conditioned upon the faithful performance of all the requirements of the Act, the regulatory program, the permit, and the reclamation plan.

The bond or bonds shall cover the entire permit area, or an identified increment of land within the permit area upon which the operator will initiate and conduct surface coal mining and reclamation operations during the initial term of the permit. As surface coal mining and reclamation operations on succeeding increments are initiated and conducted within the permit area, the permittee shall file with the Division an additional bond or bonds to cover such increments.

The operator shall identify the initial and successive areas or increments for bonding on the permit application map and shall specify the bond amount to be provided for each area or increment. Independent increments shall be of sufficient size and configuration to provide for efficient reclamation operations should reclamation by the Division become necessary.

An operator shall not disturb any surface areas, succeeding increments, or extend any underground shafts, tunnels, or operations prior to acceptance by the Division of the required performance bond.

The applicant shall file, with the approval of the Division, a bond or bonds under one of the following schemes to cover the bond amounts for the permit area as determined: a performance bond or bonds for the entire permit area; a cumulative bond schedule and the performance bond required for full reclamation of the initial area to be disturbed; or, an incremental-bond schedule and the performance bond required for the first increment in the schedule.

Form of bond

The Division shall prescribe the form of the performance bond. The Division may allow for: a surety bond; a collateral bond; a self-bond; or a combination of any of these bonding methods.

Performance bond liability shall be for the duration of the surface coal mining and reclamation operation and for a period which is coincident with the operator's period of extended responsibility for successful revegetation or until achievement of the reclamation requirements of the Act, regulatory programs, and permit, whichever is later.

With the approval of the Division, a bond may be posted and approved to guarantee specific phases of reclamation within the permit area provided the sum of phase bonds posted equals or exceeds the total amount required. The scope of work to be guaranteed and the liability assumed under each phase bond shall be specified in detail.

Isolated and clearly defined portions of the permit area requiring extended liability may be separated from the original area and bonded separately with the approval of the Division. Such areas shall be limited in extent and not constitute a scattered, intermittent, or checkerboard pattern of failure. Access to the separated areas for remedial work may be included in the area under extended liability if deemed necessary by the Division.

The bond liability of the permittee shall include only those actions which he or she is obligated to take under the permit, including completion of the reclamation plan, so that the land will be capable of supporting the postmining land use approved. Implementation of an alternative postmining land use which is beyond the control of the permittee, need not be covered by the bond. Bond liability for prime farmland shall be specific to include productivity requirements.

Determination of bond amount

The amount of the bond required for each bonded area shall: be determined by the Division; depend upon the requirements of the approved permit and reclamation plan; reflect the probable difficulty of reclamation, giving consideration to such factors as topography, geology, hydrology, and revegetation potential; and, be based on, but not limited to, the estimated cost submitted by the permit applicant.

RECLAMATION PLAN

The amount of the bond shall be sufficient to assure the completion of the reclamation plan if the work has to be performed by the Division in the event of forfeiture, and in no case shall the total bond initially posted for the entire area under 1 permit be less than \$10,000.

An operator's financial responsibility for repairing material damage resulting from subsidence may be satisfied by the liability insurance policy required in this section.

Terms and conditions for liability insurance

The Division shall require the applicant to submit as part of its permit application a certificate issued by an insurance company authorized to do business in the United States certifying that the applicant has a public liability insurance policy in force for the surface coal mining and reclamation operations for which the permit is sought. Such policy shall provide for personal injury and property damage protection in an amount adequate to compensate any persons injured or property damaged as a result of the surface coal mining and reclamation operations, including the use of explosives, and who are entitled to compensation under the applicable provisions of State law. Minimum insurance coverage for bodily injury and property damage shall be \$300,000 for each occurrence and \$500,000 aggregate.

The policy shall be maintained in full force during the life of the permit or any renewal thereof and the liability period necessary to complete all reclamation operations under this Chapter.

The policy shall include a rider requiring that the insurer notify the Division whenever substantive changes are made in the policy including any termination or failure to renew.

The Division may accept from the applicant, in lieu of a certificate for a public liability insurance policy, satisfactory evidence from the applicant that it satisfies applicable State self-insurance requirements approved as part of the regulatory program and the requirements of this section.

Analysis:

Determination of Bond Amount

As part of the midterm, review the Division reviewed the reclamation cost estimate for the Cottonwood/Wilberg mine. The current bond amount for the Cottonwood/Wilberg mine is \$3,082,587 dollars. The reclamation amount has been escalated to 2005. The reclamation cost estimate is based on the Division's cost estimate. The Division reviewed the MRP and found that no actions took place that would require a change in the bond amount.

The Division is currently reviewing the bond calculations for all mines. The Division will standardize all bond calculations. Later this year, the standardization process will be done for all mines controlled by PacifiCorp. As part of the standardization, process the bond amount may be adjusted.

Findings:

The Permittee has met the minimum requirements of the bonding section of the regulations.